

PARADISE CREEK NATURE PARK

The Seven Steps of Stewardship

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ABSTRACT

There are currently significant efforts underway in order to mitigate prior environmental damage in Paradise Creek Nature Park and to redesign it as a healthy and sustainable natural area in a predominantly industrial and urban environment. However, protection of the Paradise Creek area and the Elizabeth River in general cannot be sustainable solely through on-site project, but rather requires that surrounding communities and business be educated and engaged in the process. Thus the Elizabeth River Project has created the Seven Steps of Stewardship and the corresponding River Star certification program for homeowners and businesses. These programs engage the community through a sense of ownership and responsibility for those not directly involved in the restoration process. This proposal seeks to take this idea of community engagement and enhance it in order to create a forum for community members to share best practices of sustainability and inform others about personal steps taken towards protecting the river. This will be achieved through a social media campaign, establishing a brand through logos, t-shirts, coloring books, and educational pamphlets, as well as an interactive on-site chalkboard. While these efforts will require an initial monetary input, they will hopefully generate a sustained dialogue within the community that will greatly increase involvement in the Stewardship program and understanding of environmentally friendly lifestyle adaptations.

INTRODUCTION

The Seven Steps of Stewardship program seeks to give local community members a feeling of responsibility and connection towards the environment. The Seven Steps illustrate how minimal changes in lifestyle can have drastic implications in improving the state of the environment. While joining the program requires only a pledge, the display of RiverStar flags and certificates on homes and businesses causes participants to feel a sense of pride and involvement while also generating public interest for the cause. However this proposal suggests that the Stewardship concept also have a significant presence within Paradise Creek Nature Park (PCNP) itself. Thus we propose that logos for each one the steps be created and placed on signage throughout the park with information that emphasizes the connection between the steps and the park and how the success of the park is dependent on efforts by the community.

Furthermore, the current steps on the Elizabeth River Project website are not particularly easy to access nor do they provide a clear understanding of why the steps are beneficial and example of how they can be achieved. Thus through the creation of pamphlets Paradise Creek would facilitate education of the ecosystems, and thus local community members would act in accordance with the steps because they understand the implication not solely because they have pledged to do so. An on-site chalkboard where visitors could write how they have applied the seven steps would also provide an interactive, fun way for people to become involved with the stewardship program. Finally, establishing a social media network specifically for the Seven Steps of Stewardship would allow community members to connect with each other and strengthen the relationships of those involved with Paradise Creek Nature Park and the Elizabeth River Project.

As the park prepares for its grand opening, it is essential that community members become an active part of maintaining its ecosystems and reducing environmental impact, otherwise the park will never be sustainable. Through increased publicity and community engagement we hope that Paradise Creek will become not just a hallmark of aquatic restoration but also of local involvement in environmental protection measures. The seven steps are not difficult transitions, but rather educating individuals and creating a sense of connection and responsibility towards the environment is crucial in ensuring their implementation.

STEWARDSHIP STEPS

The Seven Steps of Stewardship provide locals of the Elizabeth River watershed a specific set of household changes to adjust their lifestyles in order to reduce impact on the river ecosystem. These steps have been chosen based on what actions cause the most river-health problems, with the most emphasis being on cutting down nutrient input. 'Why' to make these changes may not be entirely clear for someone who is not sure 'how' his or her normal habits are impacting the river. Therefore, we suggest that the park provide a fact sheet for each Stewardship Step, which goes into more detail as to what the particular household habit is doing to the health of the Elizabeth River. This could either be an individual sheet, that the park-goer could pick up depending on which specific step they were most interested in, and/or all of the steps could be compiled into one concise pamphlet that the steward could take home. Here we introduce the research we suggest to supplement the information already provided by the Elizabeth River Project, and help fill these pamphlet pages. The factual information about each step listed below may also be used on signs throughout the Paradise Creek Nature Park.

1. scoop the poop

Bacteria levels in the Elizabeth River are very high, and often times this means that the river is unsafe for swimming and puts extreme strain on the aquatic environment. A significant portion of this bacteria is the result of pet feces that is not properly disposed of and thus ends up in the river. This is an example of nonpoint pollution, and can be easily avoided if pet owners pick up after their pets. Once feces enter aquatic systems it uses up oxygen and releases ammonia, which can harm marine organisms. Levels of nutrients such as nitrogen and phosphorous increase as a result of animal waste. However animal waste is not just a potential threat to aquatic species, but to humans as well. Nutrient pollution, pathogens such as giardia and cryptosporidium, and ammonia that is present in waters used for drinking, swimming, and fishing can pose as a health threat for populations located near water. The solution is simple, pick up after your pet. Furthermore pet owners should try to get their pets to poop on organic surfaces as feces left on paved surfaces is much more likely to enter storm drains and enter the river.

2. reduce fertilizer

Too much fertilizer can be too much of a good thing. Overabundance of nitrogen and phosphorus in the Elizabeth River occurs from runoff on impervious surfaces. Elevated nutrient concentration in the river, also known as eutrophication, causes an overgrowth of algae at the surface subsequently altering the ecology of the river ecosystem. This can be detrimental to the river ecosystem in two major ways. First, the algae can block sunlight, making it difficult for benthic aquatic plants to survive. Second, when the algae die they sink to the bottom and use up dissolved oxygen in the water. Dissolved oxygen is essential for the survival of organisms; an abundance of fertilizer can cause dead zones in the Elizabeth River. A dead zone is where there is little to no life of organisms in the water column. Ultimately too much fertilizer in the Elizabeth River watershed can cause eutrophication in the Elizabeth River causing a loss of biodiversity.

Eutrophication causes cloudy water from the algae growth which can make it difficult for fish such as sticklebacks to find mates (SciLogs 2011). This interesting fact can be used to involve children in the effort to reduce the improper use of fertilizers in the Elizabeth River watershed. This step could be promoted through the social media campaign, because there are some interesting impacts such as difficulty of organisms finding mates which is directly caused by eutrophication. It would be relatively easy to incorporate the interesting facts into tweets or posts on Facebook.

3. protect storm drains

In urban and suburban areas impermeable materials such as concrete, asphalt, and metal represent a significant portion of ground surface area. While traditionally water pollution has mostly been a result of industrial waste, in recent years this pollution has become increasingly comprised of personal use items such as leaking motor oil, garden fertilizers, failing septic tanks, animal waste, and more. This transition is primarily a result of storm water runoff.

Storm water drains are a major factor in nonpoint pollution, as pollution in runoff at points of entry into rivers, streams, lakes, and oceans is highly concentrated. Chemicals are deposited into stormwater drains during precipitation, and these drainage systems often lack filtering systems, as is the case in the Hampton Roads area. However it is not just chemicals that result in damage to aquatic environments, excessive organic material and nutrients are a huge threat to aquatic ecosystems as well. Storm water runoff is responsible for 19 percent of the total nitrogen pollution in the Chesapeake Bay and a similar amount in the Elizabeth River. Nitrogen is an essential nutrient for aquatic ecosystems, but too much of it produces excessive plant and algae growth. The increased numbers of plants use up oxygen that is necessary for animal species and thus can disrupt entire aquatic ecosystems. Thus it is essential that people do not dump anything in storm drains.

The best solution for storm water pollution, however, is preventing rainwater from entering storm drains or at least at a manageable rate. This can be done through green architecture, which incorporates plant systems into designs in order to retain water. Greenroofs, which utilize this idea of green architecture, can retain 70-90% of precipitation during the summer and 25-40% during the winter. Furthermore greenroofs naturally filter the water that does run off as well as delay the time and rate in which runoff occurs. This is just one example of utilizing natural systems to control the negative effects of storm runoff, and this process is essential to controlling water pollution in urban areas such as Hampton Roads.

4. no grease in sink

Common practice and habit cause people to wash fat, oil and grease (FOG) down the kitchen sink while running hot water as an effort to prevent clogs. However, regardless of how these FOG materials are put down the sink, they still cause major blockages in sewer systems over time. The problem occurs when these blockages become too much for the system to handle. When too much FOG builds up in the sewer system, the clog can cause the pipes to burst and raw, untreated sewage washes into nearby rivers and streams through runoff. This will severely hinder the Elizabeth River Project's swimmable and fishable goals.

The good news is that this problem is easily preventable. The best way to avoid FOG issues is to pour excess fat, oil, and grease into containers and then dump them into the regular trash (The Atlantic Beach Official Website). Additionally, it is best to scrape excess foods off plates and into the trash or compost as well, the decrease of food particles in the sewage system will keep the FOG filters clear.

This stewardship step would be particularly easy to include in a "tip of the week" social media campaign. The community would learn of the specific impacts of their actions and they could share ideas about easy solutions to this problems. Additionally, tricks for keeping these materials out of the sewage system could be shared on a chalkboard wall. Community members can write specifics about their actions, as in "I always scrape excess food off my plate before washing it." This would allow the community to develop a forum for discussing convenient ideas.

5. help geese migrate

Geese have trouble finding adequate habitat and resources to take a break while migrating from Canada to the southern belt of the United States. Virginia is a resting area on the geese's migratory route. Geese need proper habitat with food resources to ensure a successful migration. The Paradise Nature Creek Park has both grass and wetland habitats; this provides adequate habitat for geese to rest on their route. Geese feed on both aquatic plants found in wetlands and grassy areas found in the Paradise Nature Creek Park. To help geese continue migrating, you can do their part by not feeding the geese. Geese will not continue migrating to the southern part of the United States if they have easy access to food. You can also do your part by not partaking in the goose hunting season in the fall; geese will have a better chance of successfully migrating.

Some interesting facts about geese migration are listed below to engage children that visit Paradise Nature Creek Park. Geese fly in a "V" formation to use the least amount of energy against the air currents. Geese have serrated edges on their bills to help pull up aquatic vegetation wetlands. With good environmental conditions, geese can fly about 1500 miles in 24 hours (National Geographic Kids). This tip could be incorporated into the social media campaign. Social media will raise awareness of this step and help people understand how and why it is important to help geese migrate could be emphasized. If the Paradise Creek Nature Park is interested in raising funds to help geese migrate then personal fundraising web pages could be encouraged through the use of social media to help raise sufficient funds.

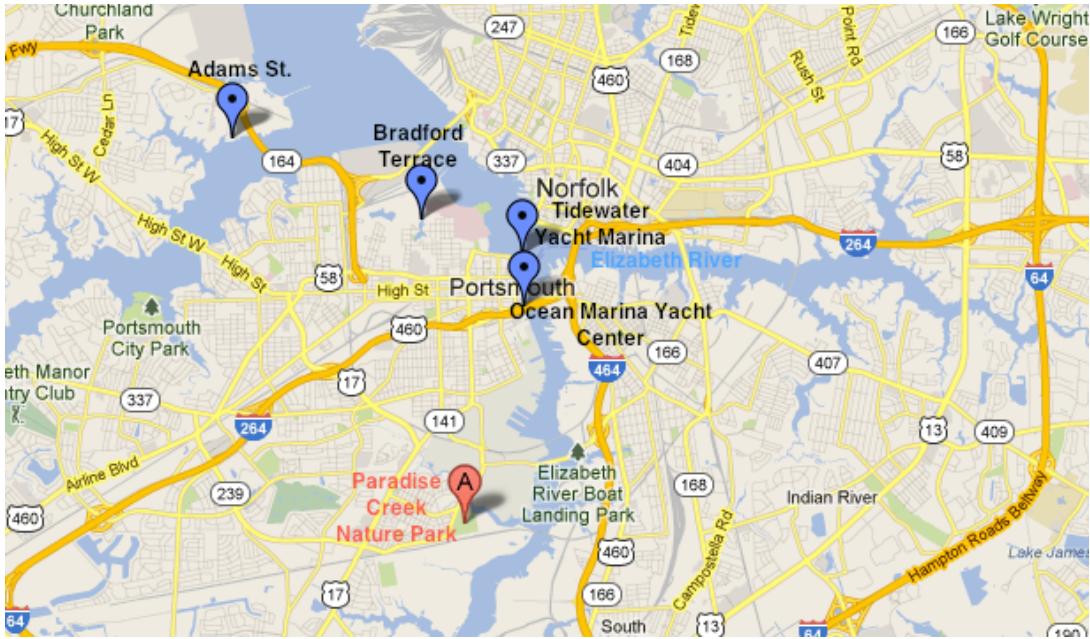
6. pump out boater sewage

Though our waste may be 'natural,' an excess input of it in a concentrated area has harmful effects. This can happen frequently in closed inlets and marinas, where recreational vehicles dump their untreated waste straight into the water and there is little water movement to flush them out. Similar to fertilizer runoff from lawns, an excess of nitrogen and phosphorous from this sewage triggers the rapid growth of large, thick blooms of algae on the water surface. This chokes the plants and animals underneath the water that need the sun to develop and survive.

Input of nutrients from boat sewage also triggers the bacteria in the water to feed on the organic matter and in the process, take up more than their normal share of dissolved oxygen in the water column. Decaying algae also contribute to this increase in organic matter and therefore bacterial activity, which can deplete the amount of oxygen in the water so much that not only to the organisms suffer from lack of sunlight exposure, but also from a lack of oxygen (UK MPAC).

Dumping this sewage into the water also makes difficult the Paradise Nature Park and Elizabeth River Project's goals to have a swimmable river, as the sewage introduces many harmful bacteria to us, including fecal coliform and streptococci. Though these two types of bacteria are not immediately harmful themselves, they are used in water quality testing as indicators of other present bacteria that could cause dysentery, cholera, hepatitis, and typhoid, which are much more difficult to test for (Shifflett). These bacteria also settle into the sediment of the water, and filter through the fauna of the region, waiting to be kicked up back into the water column or be eaten by either a predator or one of us.

To avoid these unfortunate consequences and to help make our river cleaner, please use the pump out stations at your local marina.



Local marinas that provide Pump Out Stations

As part of the Stewardship education in PCNP, reminders to pump out recreational boater sewage, including the map of which ports host pump out stations, could be easily picked up by attendees of the park who either boat or know someone that does. This information could also be distributed across the social media sites in order to better inform recreational boaters on what this waste does and remind them that it is possible to have too much of a good thing.

7. don't flush medicines

Although flushing medications down the toilet may seem like a simple way to dispose of drugs and keep them away from children and teens, this simple act can have serious implications for the environment. Our sewage treatment plants are not meant to purify the water of the man-made chemicals composing many common medications. Because of this, traces of acetaminophen, steroids, hormones, codeine, antibiotics, antimicrobials, and ibuprofen are found in many water sources (No Drugs Down The Drain). These drugs have two main effects. First, they lead to an increase in antibiotic resistance, as many natural cultures of bacteria are being exposed to antibiotics flushed down the drain. Second, these drugs have devastating effects to aquatic organisms, specifically frogs and fish. The natural growth and reproduction of these organisms is interrupted by these drugs. This causes gender ratio imbalances in populations, intersex conditions where both sex organs are found on one individual, poor egg hatching success, decreased fertility and growth, and a change in their natural behavior causing the organisms to be lethargic and disoriented (No Drugs Down The Drain). Additionally, the long term impacts of these drugs are not well studied, which leaves the potential for devastating and irreversible effects on the environment, including the biodiversity of the Elizabeth River.

There are several, safer ways to dispose of unwanted and unfinished medicines. The first is to search for a local medicine take-back event usually hosted by police departments. Through this event, you can drop off unwanted medications and they will be properly disposed of by an outside resource. Portsmouth, Virginia participated in this type of event last year. You can search for a program near you by checking out the Drug Enforcement Administration's Office of Diversion Control Website (Drug Enforcement Administration).

Additionally, advertising this event through a social media site, specifically for the park, would spread the word and connect the event to the swimmable and fishable goals of the Elizabeth River Project.

If there isn't a medicine take-back event in your area, you can also dispose of medicines in the regular trash. In order to do this safely, you should mix uncrushed medicines in a container with kitty litter or coffee grounds, seal the container and then dispose of in the trash (Environmental Protection Agency). It is important to remember to remove any personal medical information from medicine labels before disposing of the drugs. These tips could easily be circulated to the public through a "tip of the week" social media campaign. Community members will be reminded to check their cupboards for old medicines and to dispose of them in a non-threatening way.

BRANDING

The Seven Steps of Stewardship need to be branded into a logo and listed explicitly on both the Elizabeth River Project website and the Paradise Nature Creek website. These seven steps are simple and easy to remember but the transparency of these steps on the Elizabeth River Project's website is currently ambiguous. We want to raise awareness of the steps and create a conversation with the community about why the Seven Steps of Stewardship are important to making the Elizabeth River swimmable and fishable. We have developed short summaries about why the steps are important to making the Elizabeth River swimmable which we intend to make into signs within the Paradise Nature Creek Park. We will also include fun facts about each step to keep children engaged in the restoration of the Elizabeth River.

We suggest that these facts and logos should be incorporated into signs throughout the park. Each sign will display the Seven Steps of Stewardship logo to help with branding. Additionally the signs will contain information on one of the seven steps and provide fun facts for children. We thought that it would be fun and creative to design the signs into the shape of the subject matter. The "Scoop the Poop" sign will be in the shape of a scooper. The "Reduce Fertilizers" sign will be in the shape of a patch of grass. The "Protect Storm Drains" sign will be in the shape of a storm drain or grate. The "No Grease in Sink" sign will be in the shape of a kitchen sink. The "Help Geese Migrate" sign will be in the shape of a goose. The "Pump Out" sign will be in the shape of a boat and finally, the "Don't Flush Medicines" sign will be in the shape of a medicine bottle.

local artists

For the Park, we suggest that there be a call for local artists to help create seven cartoon characters – one for each of the Stewardship Steps. With these characters, we could better involve kids in understanding and becoming active about the steps, as well as promoting a local artist who could more personally characterize the area. The characters could be recurring throughout the park, to give a consistent theme as well as a continual reminder of the Stewardship Steps. These characters could also be repeated on the Stewardship pamphlets, or even in an interactive coloring book.

Coloring books are an interactive activity for children to creatively engage in the subject matter, adding a personal touch to the nature of the park and implanting the image and lesson into their brains. The nature of coloring books help engage the visual learners, and provide a rounded approach to education. The coloring book would feature the characters explaining how to help with a Stewardship, giving tips on how to be a better steward for the river, as well as to what *not* to do at home. These could also be a series of comic books for the kids, with an interesting story line that teaches about the Stewardship Steps. These books

could be offered at the Learning Barge, near the Stewardship Signs, and as a gift when Queen Elizabeth visits the schools.



Color. Find the \triangle s.



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These example coloring pages show how local Portsmouth environments can be incorporated into an interactive learning experience. (<http://www.education.com/worksheets/nature/>)

7 steps logo

To even further encompass the Seven Steps into Paradise Creek Nature Park, we propose a logo specific to the park separate from that of the River Star Homes, that can be put on pamphlets, t-shirts, and signs. This design could be developed by an eager graphic design major, or there could be a design contest amongst locals and those involved in the Elizabeth River Project. To engage the younger community, a t-shirt designing contest could be held at local schools, creating a personal touch to the park and its image. The t-shirt design could be offered to River Star home and business owners that participate in a yearly celebration at the park, and may display something on the back such as "I am a Steward of Paradise Creek Nature Park," or may list the Seven Steps of Stewardship on the back. This could act as advertising and campaigning for not only the park, but for the Steps of Stewardship and the campaign as a whole.

SOCIAL MEDIA

The Elizabeth River Project currently utilizes both Facebook and Twitter to complement their website. These social media sites are used for Paradise Creek Nature Park as well as other events and projects. This leaves opportunity for the park to have its own social media sites in order to have a forum for people specifically connected to the particular area of the Elizabeth River as well as other patrons of the park. The benefit of having separate sites for the park would be greater visibility to the public and increased control over postings. As further discussed below, we suggest using the sites to advertise for events, provide propaganda for the stewardship steps, recognize River Stars achieving high goals, and distributing tips and tricks for sustainability challenges.

We are suggesting an expansion and creation of social media to help raise awareness of actions the citizens of Portsmouth can do to help make the Elizabeth River swimmable and fishable. Social media is a cost effective way to spread the word about how local citizens can personally make a difference in the health of the watershed. We would like to create an unpaid internship program to run and help initiate a social media site specifically for the Paradise Creek Nature Park. Currently, the Elizabeth River Project does not have a separate social media site for the park. Using an unpaid intern and a social media site to provide and outreach platform and track the progress of River Stars abiding by the Seven Steps of Stewardship will be cost-effective. According to Daniel Teweles, vice president for business development and marketing at the Personal Democracy Forum, an unpaid intern is not the way to create a successful social media campaign for non-governmental organizations. He believes a director of marketing is the more appropriate choice for creating and monitoring social media campaigns because he argues that a good marketing strategy is crucial for a successful social media campaign (West, 2011). However, we recognize that with limited funds this might not be an option for the Elizabeth River Project; therefore, a competitive internship program is the next best option.

We suggest a program similar to UVA's University Internship Program. This program is an unpaid internship that requires 10 hours of work per week. In exchange interns are given college credit. This would be an easy program to adapt to the Portsmouth community. Students from local middle and high schools with experience updating social media sites could interview for the position. The time commitment could be reduced to five hours a week but multiple interns could be accepted into the program, about 5-10 interns. Instead of credit, the students could use this experience as either volunteer community service hours needed for a class or honor society requirements or they could simply use this experience as a resume builder for job or college applications. This provides opportunity to partner with local schools, which may already have programs or clubs that require students to complete a certain amount of community service hours. The mutual benefit of a program like this would ensure that the park would always be able to fill the internship position and would take the pressure off the park having to search for potential candidates.

Social media campaigns have been useful tools to raise both money and awareness for a cause. Some examples of environmental non-governmental campaigns include the National Wildlife Federation, Greenpeace, and Nature Conservancy. The National Wildlife Federation used interesting stories to spark interest in their cause which led to 29,000 views on the blog in one day (Sumac research 2010). For the Paradise Nature Creek Park, the Seven Steps of Stewardship could use interesting stories about each of the stewardship steps to spark interest in the Portsmouth area. Greenpeace encouraged personal fundraising pages to help raise money for whales in danger during migration; this could be used to raise money to help protect the geese that migrate through the Paradise Nature Creek Park (Sumac research 2010).

Paradise Creek Nature Park could use the social media examples listed above to engage local patrons. The social media sites could provide engaging ecological stories in the area which is similar to how the National Wildlife Federation peaked interest in their cause. Local, interesting stories have the potential to

motivate local Portsmouth residents to become more aware of their own personal actions that could be harming the Elizabeth River. Since Paradise Creek Nature Park is trying to further develop the park, the social media campaign could mimic the fundraising methods used by Greenpeace to help save species native to the Portsmouth area.

We suggest using both a Facebook and Twitter page specifically for Paradise Creek Nature Park. Through Facebook, the park will be able to create greater visibility for the park and entice community members. Pictures added to the site can show the park's beauty and unique design features to interest community members in visiting. Posts and updates can advertise upcoming events and programs to increase membership. Additionally, both posts and pictures can recognize River Star members who have met extraordinary goals.

Through Twitter, the park will be able to update community members on the current affairs of the park. The updates can be used to announce the status of events occurring on a specific day, the progress of projects, registration for programs, the blooming status of plants, and progress made toward the stewardship goals. These updates will allow the community to become more involved with the park.

Building off the Elizabeth River Project's aims to incorporate the surrounding Portsmouth community with the goals of the Paradise Creek Nature Park, the social media campaign will have several different parts. This campaign will work to recognize River Stars efforts, communicate sustainability tips and convey information about events and programs within the park. While the initial effort in setting up a social media site may require a lot of resources and thought, the Elizabeth River Project already uses social media so the most taxing part will be creating a new section for Paradise Creek Nature Park. Once the site is created, it will be easily maintainable, only requiring time from interns each day to update the site.

One aspect of the social media site will build upon the recognition system for the River Star Homes and Businesses. Currently, incentives for the program include a yard flag and ribbons to attach to the flag. Occasionally, new members are recognized on the Elizabeth River Project website. While this is a great way to engage the community, we believe that more excitement and interest can be sparked by using social media. The website will be used as a forum for River Star Homes that have unique or helpful tips for others in the community. Community members will be able to submit a description and picture of sustainability projects that they have incorporated into their life. This will help encourage citizens in the community to join the program because they will see that others, just like them, have been able to do these tasks without disrupting their daily lives.

Another aspect of the social media site will be to display sustainability tips. The Elizabeth River Project posts some tips and ideas on their website, but there isn't a single place where everything is compiled. To show people the simplicity and ease of living sustainability, we suggest a monthly sustainability post/tip on the social media website. To begin the project, we will compile an initial list of tips. As those tips are used, the Elizabeth River Project can add additional tips to adjust to their specific needs each month.

Several communities already rely on scheduled sustainability campaigns that are released each month. Many of these campaigns rely on a college community, but should be easy to translate to the local school system, which is widely engaged with Paradise Creek Nature Park. One precedent is Harvard, which creates a "Tip of the Month" poster series and e-mail campaign. (President and Fellows of Harvard College). The posters can be designed using standard software such as Word Publisher. They should include the main topic, an eye-catching fact, and a description of what can be done to prevent the problem. For example, if the topic of the month is clean water, the poster could show an estimate of how much sewage overflows into the Elizabeth River due to drain blockages caused by oil, grease and fats clogging kitchen pipes. Then it can explain the proper disposal methods for grease, which would be letting it cool, pouring it into a container and throwing it in the trash. The poster will then be displayed on the social media site to get

the message out. Additionally, by incorporating the local school system and River Star Businesses, the posters can be printed out on flyers and hung on bulletin boards in the schools and windows of local businesses. This will keep the community engaged in new efforts to clean up the river.

A third aspect of the social media site will be to engage the community on events and programs within the park to get more people involved. To raise awareness about a cause using social media, it is best to start using social media as a conversation rather than blasting people to become a River Star participant or to pledge to comply with the Seven Steps to Save the Elizabeth River (West 2011). The conversation with the community will build a relationship in which information about the cause can be incorporated into the social media, because people will already be engaged. Another tip for using social media to raise awareness about a cause includes using audio visual media. As a group we can create videos of people actually performing the different stewardship steps to motivate citizens in the Elizabeth River watershed to become stewards. For the twitter account, it is recommend to make hashtags concise and memorable (Cullum, How to Use Hashtags on Twitter...). For example for the Paradise Creek Nature Park Seven Steps of Stewardship, we could use #7steps or #swimmable.

interactive chalk wall

We suggest using the park as a center for taking pride in the sustainable actions community members have incorporated into their lives. In order to do this, we suggest using a chalkboard wall. The top of the board will read, "What are you doing to make the Elizabeth River swimmable and fishable?" Visitors entering the park can add their actions to the board. This will provide an easy fun activity for kids to do at the park and it will allow them to feel pride in doing their part to clean up the Elizabeth River. A report from the Bruner Foundation on the chalkboard wall in downtown Charlottesville provides all the design and cost estimates to create something similar to this structure.



Picture of the Chalkboard Wall in Downtown Charlottesville from the Bruner Foundation

With a total construction cost of over \$200,000, this project might be a bit pricey for the Elizabeth River Project; however, this cost also includes the podium built for the chalkboard wall (Bruner Foundation). Creating just the chalkboard would potentially save the park some money as a mode of advertisement, although the bulk of the cost is due to construction of the wall. The chalkboard wall in the Paradise Creek Nature Park could be smaller than the one in the Charlottesville downtown mall to save money. Additionally,

the Charlottesville community relied on many donations to support the funding for this project and this structure could be added to the park at a later date once funding has been acquired.

interactive tile activity

As a possible class activity or River Star Homes/Businesses celebration activity, the park could engage children in painting an individual ceramic tile, where they can express their art as well as adding color and creativity to the park aesthetic. The children could paint themselves performing a stewardship step or their depiction of a step. The tile could even be used as a pledge to be a steward to the park and the Elizabeth River, the children painting portraits of themselves enjoying or protecting the river.

This can be done relatively simply. Plain, unglazed ceramic tiles can be bought in bulk for as cheap as ten cents a piece. A simple ceramic glaze paint (such as Duncan) can be purchased online, usually in bulk. This glaze comes in many colors, and adheres well to the tile as it is meant especially for unglazed ceramics. After the tiles are painted (with initials so they know which tile is theirs in the future!) and the paint is dried, a clear glaze can be coated over the paintings, and the unfinished tiles can then be transported to a nearby ceramic firing business or even to a local resident with a kiln. This is the best process to achieve long lasting tiles for the outdoors. After the tiles are fired they could be placed as a mural, either around our proposed chalk wall or around the proposed Stewardship signs at the entrance of the park.



Project done in Rhode Island (<http://www.weirdgirlcreations.com/tilemuralfundraiser.aspx>)

A similar project could be executed with personalized stepping-stones for the park. These are also simple to make, with the only basic materials needed being a mold (wooden, plastic, or even an old pizza box), “Quikcrete” mortar mix (as cheap as \$6.50), a mixing bucket and stirring tool, rubber gloves, trowel, protective eyewear, and creativity! With small decorative items such as sticks, flat pieces of plastic or old toys, the children can easily illustrate what Stewardship means to them, or how important the Elizabeth River is to them.

These would both be great projects for the children to establish a real connection and responsibility towards the park, as they would now have a piece of themselves invested within it that they can continue to come back to and visit as the years progress.

CONCLUSION

Being a steward means to be responsible for managing a place or group of people. The Seven Steps of Stewardship are an integral part of improving and maintaining the health of the Elizabeth River, by giving the locals that live in the watershed the power to make a difference in the River’s health, and become stewards to their environment and their community. Yet, many of the residents of the watershed likely do not know how they directly impact the quality of their local water. Paradise Creek Nature Park is an excellent venue to educate locals about the nature around them and about what they can do to improve it, as it is an operating restoration campaign that is growing and improving with time, in an active location that people seek to connect and enjoy nature.

What we propose through these active social media campaigns, park activities, and branding of the Seven Steps, is to better educate and connect the residents with their natural surroundings through colorful, simple, and inviting factual blurbs and activities that do not threaten the learners with doomsday-like information passages, but invite them to have love and compassion for their river.

FUTURE WORK

Our project can be implemented in the future with the help of graphic designers. We hope to brand the Seven Steps of Stewardship to make it easy to promote to citizens of Portsmouth. Making a logo for the Seven Steps of Stewardship will facilitate marketing strategies that can be utilized in the pamphlet, on the chalkboard, on t-shirts, in the comic book, and with social media. The Elizabeth River Project’s marketing team could design the logo or a local artist could donate their time as mentioned above. The design aspect of our project will need further attention.

The logistics of the River Star celebratory event will need to be organized and implemented. The event could be used as way to promote the Paradise Creek Nature Park and could occur within the first year of the park’s grand opening. Food and activities would need to be determined but supplies for the event could potentially be donated by River Star businesses. T-shirts can be created for the event to continue promoting the Seven Steps of Stewardship and the River Star Program. Business sponsors could provide funding for the shirts or the shirts can be sold at the celebratory event to raise money for the Paradise Creek Nature Park. The cost and budget will need to be researched more in depth.

LESSONS LEARNED

We have had to overcome several barriers for this project. One of the most challenging barriers has been planning a project for a park far away from us geographically. We have had to think about a community and area that we knew very little about when beginning this project. However, through research about the interaction between the Elizabeth River Project and the surrounding community we have been able to gather crucial information that has shaped our project specifically for the needs of the community of Portsmouth.

Another challenging barrier has been creating technical and artsy aspects of our project as none of our team members are particularly skilled in art and design. We are creative and have many great ideas, but we have limited knowledge of designing those ideas into models and examples for Paradise Creek Nature Park. To work around this, we have mostly been using examples found through our precedents. However, we also plan to work with the signage group to see if they have suggestions about how to model our designs for the signs of the Seven Steps of Stewardship.

At the beginning of the semester, our main goal was to flesh out the Seven Steps of Stewardship into marketable and recognizable symbols of sustainability for the Paradise Creek Nature Park. Through our plans for the social media website, interactive activities, and informational signs and brochures, we have met these goals. Our plans will help spread these ideas throughout the community while maintaining the spirit of learning for kids visiting the park.

We learned that creating change can be challenging. Working with an organization like the Elizabeth River Project is difficult because we have to interpret their goals to make a project that is realistic, cost-effective, sustainable, and creative. There are many different factors to incorporate into our designs, but we managed to build off the foundation provided for us to create a project that adds to the value of the park.

Lastly, there are two things we would do differently. First, we would want to visit the park and spend time learning about the needs and assets of the community. Second, we would want to consult with someone more knowledgeable about graphics and design to help make some of our ideas more concrete.

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BILL OF MATERIALS

Seven Steps of Stewardship signs and brochures

- Construction materials for signs
- Ink and paper for brochures
- additional construction materials provided by local artists for the cartoon character signs

Coloring Book

- paper, ink and binding materials
- colored pencils and/or crayons

Interactive Tile Activity

- tiles
- glaze
- paint brushes
- cups for holding water to rinse paint brushes

Stepping Stones

- mortar mix
- bucket and stirring tools
- safety gloves and glasses for stepping stones

Interactive Chalkboard Wall

- construction materials and equipment
- chalk

Seven Steps Logo Gear

- T-shirts, baseball hats, stickers, reusable water bottles

Monthly Sustainability Tips

- paper and ink
- push pins or tape for displaying flyers

COSTS AND BUDGETS

The majority of the costs for our project will be the materials needed to create the Seven Steps of Stewardship signs and brochures and the interactive activities for children. These costs will include custom signs designed specifically for the Seven Steps of Stewardship as well as paper and ink for the brochures providing descriptions of the steps for those who want a hard copy at home. The interactive activities for children vary in price range. The cheapest activity is the interactive tile wall. Tiles and glaze can be bought for low prices in bulk. The only other cost would be the labor in taking these tiles to a kiln, which local places may provide for the park at a discount. Similarly, the items needed to make the stepping stones are cheap, requiring mortar mix, tools for mixing, and safety glasses/gloves.

The coloring book featuring the cartoon characters for the steps will be moderately priced and is dependent on the price that local artists would charge for their creation. A quote from a coloring book printing company (ColoringBook.com) has quoted that a wholesale order of 500 coloring books would cost ninety cents per sixteen-page book. They would print a design by a local artist for the park, but if one is not available to create characters, this company provides artist and graphic designers to create the characters and pages for forty dollars per page (this would include developing the characters). A graphic designer is also available to create personalized activities within the book for twenty-five dollars for two pages. The most expensive project would be the chalkboard wall. Costing around \$200,000 this is a large expense for the park. However, funds could be saved over time to cover the costs and the structure could be implemented later.

The remaining budget and funding associated with our project will be low, because we plan to focus on using social media as our major community outreach tool. Social media is current, environmentally-friendly, and also low cost. We are hoping to use funds from local River Star businesses to finance the Seven Steps of Stewardship signage in Paradise Creek Park. We plan to offer advertisement of the River Star businesses in the park near the Seven Steps of Stewardship signage. We also suggest promoting the River Star businesses as environmentally-friendly companies with our social media campaign in return for their support. We plan to make our project cost-effective and sustainable by using natural and/or recycled materials and utilizing donations from River Star businesses. This will ensure that Paradise Creek Park can use all aspects of this proposal without having to raise funds annually.

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